

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P02067	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/NO 03/00424	International filing date (<i>day/month/year</i>) 17.12.2003	Priority date (<i>day/month/year</i>) 23.12.2002
International Patent Classification (IPC) or both national classification and IPC F25B9/00		
Applicant SINVENT AS ET AL.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 18.06.2004	Date of completion of this report 03.02.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer McLaughlin, D Telephone No. +49 89 2399-2762



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/NO 03/00424

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-6 as published

Claims, Numbers

1-8 as published

Drawings, Sheets

1/3-3/3 as published

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/NO 03/00424**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	4-6
	No: Claims	1-3, 7, 8
Inventive step (IS)	Yes: Claims	4-6
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-8
	No: Claims	

2. Citations and explanations

see separate sheet

Section V

- 1) a) All the essential features of claims 1 to 3 and 6 to 8 are expressed in facultative terms, e.g. in claim 1 it is claimed that the heat pump efficiency "can be improved". This means that such expressions can be ignored in the analysis of the claim. However, in order to render a meaningful examination possible, it will be assumed in the following that said facultative expressions have been replaced by definitive ones; e.g. "can be improved" in claim 1 by "is improved".

b) Claims 1 to 6 are directed to a refrigeration system but the essential features thereof have been expressed in terms of a method step; e.g. the characterising feature in claim 1 that the efficiency is improved by controlling the compressor suction gas superheat is not a feature of said system but rather how it is operated, or, in other words, a method step. (It should be noted that a controller or regulator for performing the above function has not been revealed in the application as filed). The above claims are therefore unclear making an examination difficult.
- 2) Document EP-A-1 043 550 (document D1), which is regarded as the closest prior art reveals (see column 5, line 6 to column 7, line 30 and figures) a compression refrigerating system including at least a compressor (2), a heat rejector (3), an expansion means (5) and a heat absorber (6) connected in a closed circulation circuit that may operated with supercritical high-side pressure, whereby said system heat pump efficiency is improved by controlling the compressor suction gas superheat and that carbon dioxide or a refrigerant mixture containing carbon dioxide is applied as the refrigerant in the system.

Hence, document D1 reveals all the features of claim 1 and claim 1 is not new (Article 33(2) PCT).
- 3) Document D1 also reveals all the features of dependent claims 2, 3, 7 and 8 so that these claims are also not new (Article 33(2) PCT).
- 4) The combination of the features of dependent claims 4 to 6 are not known from nor rendered obvious by the available prior art. Hence the combination of the features of claims 4 and 5 or 4 and 6 should have been added to a clarified claim 1.
- 5) The industrial applicability of the invention is obvious.